Energy Policy Update

Energy and Environmental News

February 4, 2013

This newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call (602) 771-1143 or toll free (800) 352-5499. Compiled and edited by Gloria Castro, Special Projects Coordinator. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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For your convenience, Arizona-related titles are highlighted in blue.

ARIZONA

Arizona Attorney General Seeks To Block EPA Rules on Coal-Fired Haze

[Phoenix Business Journal, Feb. 1] Arizona Attorney General Tom Horne is looking to stop the U.S. Environmental Protection Agency from enforcing a $1 billion plan to improve emissions at state power plants. Horne filed a petition for review with the U.S. Ninth Circuit Court of Appeals on Thursday to block the rule, which is aimed at reducing air pollution and haze. In a statement announcing the decision to file, Horne said it was about protecting utility rates that would be forced higher as a result of the EPA's rule.

Breakthrough Science: Mapping CO2 Emissions

[ASU News, Jan. 30] ASU researchers have developed a new software system capable of estimating greenhouse gas emissions across entire urban landscapes, all the way down to roads and individual buildings. Until now, scientists quantified carbon dioxide (CO2) emissions at a much broader level. In a new BreakThrough Science video posted on the American Chemical Society Publications website, ASU scientist Kevin Gurney explains how his research team can quantify CO2 emissions in such detail.

Cutting Air Pollution Will Cost CAP Users

Energy Prices Rise With Plant Upgrade

[Arizona Daily Star, Feb. 4] An expensive upgrade to slash air pollution from a power plant would boost Central Arizona Project water costs nearly 12 percent for Tucson and other major Arizona cities, the CAP says. A much bigger bite - between 32 and nearly 40 percent - would hit farmers, including farmers on the Tohono O'odham Nation. The costs would rise because the proposed upgrade of the coal-fired Navajo Generating Station in Northern Arizona near the Utah border would mean higher energy bills for the CAP - Tucson's main drinking water supply. Navajo furnishes more than 90 percent of the power that pumps Colorado River water uphill to Tucson. But it will be years before the higher costs kick in - and other complex issues related to the plant make it uncertain whether it will even survive. The U.S. Environmental Protection Agency has made this proposal as a

way of reducing haze blocking views of the Grand Canyon and 10 other Southwestern national parks and wilderness areas. The public gets 90 days to comment, starting next month. Under this proposal, Navajo's operator, the Phoenix-based Salt River Project, would have a decade, five more years than originally thought, to install the controls. They resemble automobile catalytic converters. They would cut nitrogen oxide emissions by 84 percent and improve visibility at the national parks by 73 percent, the EPA says. CAP rate increases would likely kick in by about 2018, when the Salt River Project would start making the needed investments.

First Solar May Sell Cheapest Solar Power, Less Than Coal

[Bloomberg, Feb. 1] First Solar Inc. (FSLR), the world's largest maker of thin-film solar panels, may sell electricity at a lower rate than new coal plants earn, according to a regulatory filing from a project it purchased in New Mexico. El Paso Electric Co. (EE) agreed to buy power from First Solar's the 50-megawatt Macho Springs project for 5.79 cents a kilowatt- hour, according to a Jan. 22 procedural order from the New Mexico Public Regulation Commission. That's less than half the 12.8 cents a kilowatt-hour for power from typical new coal plants, according to models compiled by Bloomberg. First Solar, which said in a statement yesterday that it bought the Macho Springs project from Element Power Solar, didn't disclose any of the state and federal incentives that will boost the company's revenue from the project. The Macho Springs rate would be "the lowest solar power purchase agreement price we have ever seen," Aaron Chew, an analyst at Maxim Group LLC in New York, said in an e-mail. It's less than half the rate that First Solar will get for its Antelope Valley, Topaz, and Agua Caliente projects, he said.

Massive Solar Plant Eyed Near Maricopa

[Arizona Republic, Feb. 1] An Italian company is proposing to build a massive solar-power plant south of Phoenix near the town of Maricopa and the Sonoran Desert National Monument, and it will discuss its plans publicly Tuesday night. The company, Marisol Energy 2, envisions a project that would generate 300 megawatts, enough power for 75,000 homes, when the sun is shining. The Maricopa Solar Park Project would require about 1,700 acres of land. The company applied in April with the Bureau of Land Management to use the parcel, BLM spokesman Dennis Godfrey said. The BLM has designated the land as being appropriate for renewable-energy projects, Godfrey said. "It gives them a step up that ... we think this is suitable land for renewable energy," he said. "They still need their environmental-impact studies." The land is not one of the two solar-energy zones in the state that the BLM announced in October. Projects that develop in those areas are fast-tracked for development. The Interior Department created the zones in hopes of getting large projects built quickly.

Officials Consider Altering Renewable Mandate

[The Republic, Jan. 26] Arizona regulators are considering sweeping changes to the way utilities such as Arizona Public Service Co. comply with the mandate to get 15 percent of their electricity from renewable sources by 2025. One change could reduce the mandate for APS to 13.35 percent. Other changes could affect the incentives that utilities pay for homeowners and businesses to install solar. Besides the now-common objections from companies that install solar panels, the U.S. Defense Department, Walmart and other large solar-using customers oppose some of the measures. Last week, the Arizona Corporation Commission, five elected officials who set utility policies, made minor changes to APS and Tucson Electric Power Co. renewable-energy plans. Even bigger changes are on the table in the months ahead, which could affect the $4 or so APS collects each month from residential customers for renewable energy and how it is spent. Commissioners said the tariff is expected to increase sharply in the next few years as the renewable-energy requirement rises, and the price could be too high for customers.

Page Still Shellshocked by EPA Rule

[Arizona Daily Sun, Jan. 29] PAGE – Backers of the Navajo Generating Station are finding themselves still a bit shellshocked by a Jan. 18 bombshell dropped by the federal Environmental Protection Agency. EPA effectively gave NGS and its owners 10 years to install up to a billion dollars' worth of new emissions controls. The Best Available Retrofit Technology is designed mainly to improve visibility at the Grand Canyon. Although the plan carries a 90-day public comment period before taking effect, supporters of the 2,250-megawatt, coal-fired plant expect the terms to stick. A worst-case scenario has the plant's operating agent walking away and leaving hundreds of mostly Native American employees out of work. The plant is located just east of Page, in the LeChee Chapter of the Navajo Nation. Chapter president Irene Whitekiller said the matter has not been formally discussed at the chapter level. But Whitekiller was not reluctant to air her own views, and estimated that 30 percent of the plant's 400-some workers live in her chapter. She said she believes NGS is being targeted because environmentalists choose to overlook the impact of forest fires, vehicle emissions and smoke from wood-burning stoves.

Rally Slams Corporation Commission for Solar Incentive Cuts

[Cronkite News, Jan. 30] PHOENIX – Environmentalists and solar industry leaders rallied Wednesday outside the Arizona Corporation Commission, saying they fear recent cuts to renewable-energy incentives will lead to future reductions that could harm the industry. "There's no question they're doing it calculatedly; they know what they're doing," said Randy Dunton, a project developer with Hawkins Design Group, which develops power plants for commercial businesses. The commission voted 5-0 last week to cancel incentives for large commercial customers' solar projects in areas served by Arizona Public Service Co. and Tucson Electric Power. It also cut back on incentives for residential customers' installations. Those incentives often come in the form of utility rebates that complement federal or state tax credits. Opponents said cutting incentives will make businesses and homeowners less likely to convert to solar, which in turn will deter solar manufacturers from opening plants here. They argued that they had little time to voice those concerns before last week's vote.

ALTERNATIVE ENERGY AND EFFICIENCY

Alternative Energy Initiatives Continue at Department of Defense

[Association of Corporate Counsel, Jan. 2] While renewable energy tax issues remain in flux amidst negotiations between Congress and the Administration, work on other federal renewable initiatives continues. On December 20 and 21, the House and Senate, respectively, approved the conference report for the Fiscal Year (FY) 2013 defense authorization bill allowing, with some limitations, the continuation of work by the Department of Defense (DOD) on biofuel projects. DOD is the largest government user of energy, spending over $17 billion on fuel costs in FY 2011. Although DOD's investments in alternative energy have been comparatively small, the Department has sought to grow this capacity, for both operations and on installations. DOD uses several key criteria in pursuing alternative fuels, they must: (1) be "drop-in" and require no modification to existing engines; (2) be cost-competitive with conventional petroleum fuels; (3) be derived from a non-food crop feedstock; and (4) have lifecycle greenhouse gas emissions less than or equal to conventional petroleum fuels. Formal responsibility for DOD's alternative fuels initiatives and policy is vested within the Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs. Last April, the Defense Department announced it had set a goal to deploy three gigawatts of renewable energy – including solar, wind, biomass, or geothermal – on Army, Navy, and Air Force installations by 2025. In addition, each of the three services is pursuing a different approach to increase its use of alternative fuels. The Army aims broadly to increase use of renewable energy and through the U.S. Army and Corps of Engineers (USACE), issued an order contract for $7 billion in total capacity to procure reliable, locally-generated, renewable, and alternative energy through power purchase agreements. The Air Force aims to test and certify all aircraft and systems on a 50-50 alternative fuel blend by the end of 2012 and acquire 50 percent of its domestic aviation fuel as an alternative fuel blend by 2016. The Navy aims to deploy a "Great Green Fleet" strike group of ships and aircraft running entirely on alternative fuel blends by 2016 and meet 50 percent of the Navy's total energy consumption from alternative sources by 2020. The Navy also partnered with the Departments of Energy and Agriculture to pledge $510 million to "assist the development and support of a sustainable commercial biofuels industry" by partnering with industry to construct domestic biofuel plants and refineries.

DOE Announces New Projects To Boost Solar Energy

[Electric Light & Power, Jan. 31] As part of the Department of Energy's SunShot Initiative, the DOE announced seven data-driven projects to unearth new opportunities for reducing costs and accelerating solar energy deployment in the U.S. These projects — located in California, Colorado, Connecticut, Massachusetts, North Carolina and Texas — will improve the operations of solar energy researchers, manufacturers, developers, installers and policymakers, and speed the commercialization and deployment of solar energy. "Through powerful analytical tools developed by our nation's top universities and national labs, we can gain unparalleled insight into solar deployment that will help lower the cost of solar power and create new businesses and jobs," said Energy Secretary Steven Chu. "Projects like these will help accelerate technological and financing innovations — making it easier for American families and businesses to access clean, affordable energy." The DOE will invest about $9 million across the seven projects announced today. These efforts will help scientists, project developers, installers and communities work together to discover previously unexplored ways to improve solar cell efficiency, reduce costs and streamline installation processes.

Public-Sector Group-Buy Program Speeds SolarWorld Panels to Local Governments

Program eases local and state government access to affordable American-made solar systems

[Business Wire, Jan. 31] Hillsboro, OR – Beginning tomorrow, solar panels and complete solar systems from SolarWorld, the largest U.S. solar manufacturer for more than 35 years, will be available through the only

group-purchasing program to offer renewable-energy products and services to U.S. state and municipal government agencies. SolarWorld was selected as an approved vendor by HGACBuy (Helping Governments across the Country Buy), a 35 year-old cooperative-purchasing program of the Houston-Galveston Area Council. HGACBuy is composed of 6,106 local and state government agencies and nonprofits in 47 states, including cities, counties, utilities, community colleges, universities, school districts, transportation agencies, port authorities and fire protection districts. One of only four HGACBuy-approved solar-energy providers, SolarWorld received the highest score in HGACBuy's evaluation of responses to its competitive solicitation for its high-quality, American-made solar panels, complete solar systems, and engineering and construction services.

Report: Clean Power Is Moving (Gradually) Into Americans' Homes

[Bloomberg, Jan. 31] Americans are increasingly relying more on natural gas and renewable energy for heat, power and transportation. From 2007 to 2012, natural gas use grew from 23.4% to 27.2% while renewable energy consumption rose from 6.4% to 9.4%, according to a report released on Thursday. At the same time, the use of coal fell from 22.5% to 18.1% in that 5-year period. Nine gigawatts of coal power plants retired in 2012. But in the short term, at least, coal will remain a key source of energy for the U.S. mainly because the cost of running coal and natural gas power plants remains comparable. The gradual switch to cleaner sources of energy has contributed to a 13% decline in carbon emissions from 2007 to 2012, the report said. The report, put together by Bloomberg New Energy Finance and the Business Council on Sustainable Energy, seeks to highlight the successes of the clean power industries. It also shows yet again the teaming up of renewable energy and natural gas lobbying groups to grab the attention of policy makers and the public. While cheap natural gas can be a threat to solar and wind energy development — utilities might prefer to build more natural gas power plants that can deliver electricity around the clock — natural gas also could play a complementary role. Natural gas power plants can increase or decrease their production relatively quickly, and that ability could help to make up for any shortfall in wind or solar generation, which varies depending on weather conditions, in order to meet demand.

Research Facility Influences New High Performance Buildings

[RenewableEnergyWorld.com, Jan. 29] Washington, D.C. – The Research Support Facility (RSF) at the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) has hosted thousands of visitors since it opened as one of the world's largest high performance office buildings. Generating buzz about the energy savings possible in commercial buildings is exactly what DOE and NREL have been aiming for. "There are days when I think I should quit my job and just be a tour guide," jokes NREL Senior Research Engineer Shanti Pless. "But I'm willing to do it because I see the impact taking people through this building has on our future energy savings." Energy savings is precisely what the RSF demonstrates every day as 1,800 NREL staff start their workdays in a 360,000 square-foot Class A office building that generates as much electricity as it uses, thanks to rooftop photovoltaics. Even after potential visitors hear that the RSF was built at the same price as a non-efficient building, they can be skeptical — until they see it with their own eyes.

Total Capacity of U.S. Department of Defense Renewable Energy Installations Will Quadruple by 2025

[Pike Research, Jan. 28] The U.S. Department of Defense (DOD) currently spends approximately $20 billion per year directly on energy, consuming 3.8 billion kilowatts hours (kWh) of electricity and 120 million barrels of oil per year. The effort to reduce energy costs and reliance on fossil fuels – often purchased from countries hostile to U.S. interests – and increase energy security, particularly for forward operating bases (FOBs), is driving sweeping changes to DOD policies around energy. In particular, the DOD has ambitious plans to increase its use of renewable energy. According to a recent report from Pike Research, a part of Navigant's Energy Practice, the total installed capacity of renewable energy sources for the U.S. military will grow from 80 megawatts (MW) in 2013 to more than 3,200 MW by 2025 – increasing more than four-fold in 12 years.

U.S. Ex-Im Bank Providing Solar Module Export Loan

[SolarIndustryMag.com, Jan. 29] The Export-Import Bank of the United States (Ex-Im Bank) has approved a $780,000, 10-year loan to be made by UPS Capital Business Credit to finance the export of photovoltaic solar modules from Suniva Inc. in Norcross, Ga., to a 500 kW rooftop solar power project by Grupo Metal Intra SAPI de CV (GMI). GMI operates in Mexico's prefabricated-building industry. The transaction is being made possible by utilizing medium-term buyer financing that is available to support smaller-scale renewable energy projects in Mexico and in most other countries, the Ex-Im Bank explains

ENERGY GENERAL

Coal Mining Wilts in US Bastion Even As Fuel's Use Booms Globally

[Associated Press, Jan. 28] SHERIDAN, WY – Hundreds of millions of tons of coal, packed into seams up to 60 feet thick, are still to be had beneath the rock-strewn hillsides speckled with snow that rise up along the remote Montana-Wyoming border. Yet for Mike Cooley, 41, the days of drilling explosives into the ground to blast the fuel from the earth are over, long before he ever expected. He thought his job as a "powderman" at the Decker strip mine would take him into retirement. Now he's looking for new work, after he and 58 other miners were laid off from Decker in recent weeks to add to several hundred jobs reported lost in the past year from the nation's largest coal-producing region. As a dispute over West Coast ports hobbles the industry's ability to reach booming markets in Asia, cheap natural gas is undercutting coal in the U.S. - and putting some of the small towns in coal country in economic peril. For decades, the 25,000-square-mile Powder River Basin that surrounds Sheridan has been the stronghold of the U.S. coal industry. Massive strip mines, carved from a landscape dominated by sagebrush and cattle ranches, churn out close to a half-million tons of the fuel annually, dwarfing production from mines in the Appalachians and the Midwest. Now the depressed domestic coal market is catching up to mines in Montana and Wyoming. Paradoxically, out-of-work miners in those states are scrambling for new employment even as global coal markets enjoy a heyday. Driven by Asian demand, experts say, coal is projected to challenge oil as the world's top energy source within the next four years. The sole exception will be in the U.S.

Online Service Improves Public Access to State Energy Data

EIA expands its API to include the State Energy Data System

[U.S. Energy Information Administration, Jan. 29] The U.S. Energy Information Administration (EIA) has added its State Energy Data System (SEDS) annual time-series data to the agency's application programming interface (API). EIA's SEDS data library adds 1.4 million data points, summarizing energy production, consumption, prices, and expenditures, to the API that EIA launched in October 2012. The API allows direct third-party computer access to the agency's public data and is ideal for software developers working in the government, research, or the energy sector who are looking to design information technology applications. "Expanding EIA's API to include important information on state energy consumption, production, and expenditure trends is a crucial enhancement that we are eager to share," said EIA Assistant Administrator for Communications Gina Pearson. "While EIA has created many cutting-edge tools for the public to explore energy data, our expanded API now gives innovators direct access to state-level energy data to develop their own web and mobile apps."

Kinder Morgan Energy Buying Copano for $3.2B

[Arizona Daily Sun, Jan. 30] Kinder Morgan Energy Partners will acquire the natural gas company Copano Energy LLC for about $3.2 billion in stock, giving the energy transportation and storage company more access to oil and gas-rich territory in Texas, Wyoming and Oklahoma. Including the assumption of debt, the deal is valued at around $5 billion. Copano largely serves natural gas producers, doing work in gathering, processing, treating and natural gas liquids fractionation.

Water Demand for Energy to Double by 2035

[National Geographic News, Jan. 30] The amount of fresh water consumed for world energy production is on track to double within the next 25 years, the International Energy Agency (IEA) projects. And even though fracking—high-pressure hydraulic fracturing of underground rock formations for natural gas and oil—might grab headlines, IEA sees its future impact as relatively small. By far the largest strain on future water resources from the energy system, according to IEA's forecast, would be due to two lesser noted, but profound trends in the energy world: soaring coal-fired electricity, and the ramping up of biofuel production. If today's policies remain in place, the IEA calculates that water consumed for energy production would increase from 66 billion cubic meters (bcm) today to 135 bcm annually by 2035. That's an amount equal to the residential water use of every person in the United States over three years, or 90 days' discharge of the Mississippi River. It would be four times the volume of the largest U.S. reservoir, Hoover Dam's Lake Mead.

INDUSTRIES AND TECHNOLOGIES

1366 Technologies Opens 25 MW Solar Wafer Factory in Massachusetts

[SolarIndustryMag.com, Jan. 30] 1366 Technologies, developer of a proprietary solar wafer manufacturing technique, has opened a new 25 MW wafer manufacturing facility in Bedford, Mass. The 42,000 square-foot factory, slated to employ 100 people, represents the final step in the path to commercialization of the company's Direct Wafer technology. According to the company, the Direct Wafer process produces a uniformly better wafer at half the cost of traditional PV wafers. The process creates multicrystalline wafers directly from molten silicon instead of through the usual multi-step, energy- and capital-intensive process. Within the next 12-18 months, Direct Wafer production is expected to increase from thousands of wafers to millions, as the company's team of engineers and scientists fine-tune the process to where it can be transferred and replicated in future facilities.

A Quiet Breakthrough in Geothermal Energy

[Bloomberg Businessweek, Jan. 25] Not a lot of startups tackle the field of geothermal power, which entails tapping into hot rocks deep in the earth to produce energy and electricity. That's because it can be an expensive proposition, and can require extensive permits and environmental reports. But a rare startup called AltaRock Energy has recently delivered a promising breakthrough that it says can lead to the commercialization of its next-generation geothermal technology. AltaRock Energy—which has backing from venture capitalists, as well as Google (GOOG) and Microsoft (MSFT) co-founder Paul Allen's investment firm—has been working on enhanced (sometimes called engineered) geothermal tech. This technology drills wells deep into the ground, injects them with cold water to fracture the hot rocks, and creates a geothermal source of power where none was naturally occurring. Traditional geothermal systems, in contrast, tap into naturally occurring geothermal reservoirs (you know, the kind you see on the side of the road in Yellowstone National Park). Geothermal power has massive potential in many areas of the U.S. but it has long remained a niche technology. A study that came out a few years ago from MIT found that enhanced geothermal system technology could create 100 GW of electricity by 2050 if the technology got reasonable investment in R&D—100 GW is equivalent to the power produced by 100 large coal power plants. But given that traditional geothermal systems are the only ones in use, geothermal power sources have been stuck in isolated areas that have geothermal activity.

Automakers in Alliance To Speed Fuel-Cell Development

Ford, Daimler, Renault and Nissan will invest equally in hydrogen fuel-cell technology and work to develop a common system.

[Associated Press, Jan. 29] Ford Motor Co. is joining with Daimler and Renault-Nissan to speed development of cars that run on hydrogen, with hopes of bringing a vehicle to market in as little as four years. Hydrogen fuel-cell vehicles generate electricity after a chemical reaction between hydrogen and oxygen. Hydrogen is stored in special high-pressure tanks, and the only emissions are water vapor and heat. Under the alliance, each company will invest equally in the technology. They plan to develop a common fuel cell system that the companies will use to power their own vehicles. The companies also plan to take advantage of their combined size to reduce costs. Many automakers have been testing the hydrogen fuel-cell vehicles for years but haven't been able to bring costs down enough to sell the vehicles in mass markets. The zero-emissions cars have the potential to cut pollution and reduce the world's reliance on oil for transportation. "Working together will significantly help speed this technology to market at a more affordable cost to our customers," Raj Nair, Ford's group vice president for global product development, said in a statement issued Monday. "We will all benefit from this relationship, as the resulting solution will be better than any one company working alone." The companies said engineering work on the individual fuel cells and the overall hydrogen system will be done jointly by the companies at several locations around the world. They also are studying joint development of other parts for fuel-cell vehicles in an effort to bring down costs.

Chinese Firm Wins A123 Despite U.S. Tech Transfer Fears

[Reuters, Jan. 30] China's largest auto parts maker won U.S. government approval to buy A123 Systems Inc a maker of electric car batteries, despite warnings by some lawmakers that the deal would transfer sensitive technology developed with U.S. government money. The sale of the lithium-ion battery maker to a U.S. unit of Wanxiang Group was approved by a U.S. government committee on foreign investment, according to a statement from the Chinese company. Last month, Wanxiang's U.S. agreed to pay $257 million for A123's automotive battery business and related assets in a bankruptcy auction, beating out U.S. rival Johnson Controls Inc of Milwaukee. But the transaction still needed approval by the Committee on Foreign Investment in the United States, a government body led by the Treasury secretary. The CFIUS approved the deal on Monday night, according to Wanxiang.

Elster Solutions Introduces Callisto(TM); New Grid Performance System Answers Utilities' Desire for Improved Operations and Enhanced Customer Service

[Electric Light & Power, Jan. 30] Elster Solutionstoday announces the introduction of Callisto(TM), a new Grid Performance System that transforms how utilities optimize their Advanced Metering Infrastructure (AMI) systems, which play a key role in Smart Grid deployments. Callisto, Elster's latest AMI innovation, goes beyond standard functionality to elevate data into information that supports actionable intelligence without the significant expense and frustration of buying and integrating specialized applications. "The original driver for most AMI investments was meter-to-cash revenue recognition," said Joe Orlando, Vice President Strategy, Elster Solutions. "Now, it is about realizing additional benefits from the investment in infrastructure and the wealth of data it creates for utilities. With a new focus 'above the meter,' Callisto supports our customers' desire to have greater transparency and access to the information their AMI infrastructure can provide." Elster's Callisto was designed to help utilities analyze events such as outages, transformer overloading, voltage behaviors, losses, demand response, load control and much more. Based on a modular and expandable architecture, Callisto empowers utilities of any size to build on a Meter Data Collection (MDC) and Meter Data Management (MDM) feature-rich platform through a series of optional "Stackable Answers(TM)." Callisto provides the access to the data, information and analytics typically only available at a higher cost and through a significantly complex series of disparate systems.

Supersized Wind Turbines Head Out to Sea

The giant turbines could help make offshore wind cheaper.

[MIT Tech Review, Feb. 1] Siemens installed two colossal offshore wind turbines this week, demonstrating technology that could have a significant impact on the economics of wind power. The German company has been developing the turbines, which produce double the maximum power output of its current models, for several years. It has been testing the technology on land, and installed the first ones offshore with the help of a new ship designed specifically for the task. The turbines feature test blades that are 60 meters long, but Siemens intends to employ world-record 75-meter blades eventually.

LEGISLATION AND REGULATION

Germany Plans to Cap Renewable Subsidies

[Bloomberg, Jan. 29] BERLIN — Moving to prevent a political backlash over the costs of shifting from nuclear power to alternative energy, a senior ally of Chancellor Angela Merkel announced plans to cap the rise in household electricity prices and force industry to pay a greater share of the bill for Germany's energy shift to renewable power. Environment Minister Peter Altmaier said the government would propose legislation that could be passed by August to freeze subsidies to renewable-power producers at current levels until the end of 2014. After that, any increases in the levy would be limited to 2.5% a year. The bill would allow grid operators to reduce payments they make to new renewable power plants for feeding power into the national network. Ms. Merkel won the backing of ordinary Germans in the aftermath of the Fukushima nuclear-power disaster in Japan in 2010 by ordering the closure of several nuclear power stations and setting a timeline for exiting nuclear power altogether. Dubbed Ms. Merkel's "energy revolution," the sudden acceleration of the push into alternative energy has been financed in part by a surcharge on electricity bills, largely paid by ordinary households.

How Chinese Import Duties Could Help Polysilicon Suppliers — and Hurt Everyone Else

[RenewableEnergyWorld.com, Jan. 31] BEIJING – Polysilicon used in solar panels is set to extend its rebound from a decade low as China moves to impose duties on importers such as Germany's Wacker Chemie AG. Spot prices will jump as much as 39 percent this year to $22 a kilogram ($9.98 a pound), according to the median estimate in a Bloomberg survey of seven analysts. The commodity hit a low $15.83 in December, the cheapest price since at least 2000, according to data compiled by Bloomberg. China, the biggest buyer in the $5.5 billion market, plans to issue a draft ruling in February on dumping and unfair subsidy allegations made against foreign suppliers such as South Korea's OCI Ltd., Hemlock Semiconductor Corp. of the U.S. and Wacker. The country's first import tax would boost prices from unprofitable levels, the world's largest polysilicon maker said. "The industry is abnormal, with all the major producers suffering losses at previous prices ranging from $15 to $16 a kilogram," said Lv Jinbiao, deputy manager of Jiangsu Zhongneng Polysilicon Technology Development Co., a unit of China's GCL- Poly Energy Holdings Ltd., the world's biggest polysilicon manufacturer. GCL-Poly's shares have leaped 38 percent in one month in Hong Kong. Lv, whose spoke in a phone interview, forecast the spot price to recover to as high as $25 a kilo if import duties are set this year. That's up from $16.16 recorded on Jan. 21.

Regulators Working To Fix Scam-Ridden U.S. Biofuel Program

[RenewableEnergyWorld.com, Feb. 1] The Environmental Protection Agency is proposing rules to expand the use of renewable fuels and thwart scams in a program hit by fraud and facing increasing criticisms from U.S. refiners. The EPA yesterday called for a mandate of 16.55 billion gallons for renewable fuels such as ethanol for this year, up 8.9 percent from 2012 and in line with a target set by Congress. Parties have 45 days to comment before a final mandate is set. The agency also issued rules aimed at preventing scams, after the EPA determined that three separate companies sold fraudulent Renewable Identification Numbers, or RINs, for fuel they never produced. "Following a number of high-profile RIN fraud cases, EPA expects its rulemaking to improve the overall liquidity in the RIN market and in particular make it easier for smaller renewable fuel producers," the agency said in a statement. A 2007 federal law requires that refiners such as Exxon Mobil Corp. blend certain amounts of renewable fuels with gasoline each year, with the amount determined by their share of the fuel market. Instead of producing the fuels themselves, refiners can buy credits, or RINs, from other producers to fulfill their obligations. Under the proposal issued yesterday, purchasers of the renewable-fuel credits would have them verified through third- party audits. The rule would also specify the conditions under which invalid RINs must be replaced, and by which party would be responsible to pay.

Washington DC Requires Commercial Buildings To Track Energy and Water Use

[CleanTechnica.com, Jan. 31] Washington DC just took another step toward its stated goal of becoming the greenest city in the United States, with a new requirement for all large commercial buildings to report annual energy and water use. As of April 1, 2013 all privately owned buildings over 100,000 square feet must benchmark their 2012 energy and water use to the District's Department of the Environment(DDOE) and then continue reporting on an ongoing annual basis. All reporting will be uniformly conducted under the EPA's free Energy Star Portfolio Manager. This ambitious effort falls under DC's Clean and Affordable Energy Act, and adds to existing energy reporting requirements for all publicly owned buildings. The commercial reporting scope will expand next year to cover all buildings over 50,000 square feet, and all reported data will be publicly available starting in late 2013 to democratize data and help inform potential buyers and tenants looking for efficient properties.

GE Sees U.S. Wind Credit Muting Slump in Turbine Demand

[Bloomberg, Jan. 31] The extension of a U.S. wind-power tax credit will temper a plunge in demand for turbines over the next two years, according to the chief of General Electric Co. (GE)'s renewable energy unit. Installations in 2013 and 2014 may match the average annual levels that preceded a rush to finish projects by the end of 2012, when the credit was set to expire, GE Vice President Vic Abate said today. U.S. demand had been about 5,000 megawatts to 6,000 megawatts a year before that surge, he said. "You could see that kind of average holding, with '13 being a little under the average and '14 being a little over," Abate said in a telephone interview. Turbine installations totaled more than 13,000 megawatts last year, and "I don't think we get there again," he said. Questions about the fate of the tax credit stalled wind- power projects for 2013 and beyond before its extension as part of the fiscal compromise between President Barack Obama and his opponents in Congress. Declining U.S. turbine orders this year will still damp profit, Fairfield, Connecticut-based GE said.

WESTERN POWER

NRC: San Onofre Nuclear Plant Restart Decision To Come in Spring

[Power Engineering, Jan. 29] The U.S. Nuclear Regulatory Commission (NRC) announced last week that a decision will be made in late April or May on whether to restart reactor Unit 2 at the 2,200 MW San Onofre Nuclear Generating Station, San Diego 6 News reports. An announcement would then be expected shortly thereafter. A small leak was discovered in Unit 3 in January 2012, and that unit was shut down after workers determined premature wear on tubes caused it. An inspection of Unit 2, which was offline at the time for maintenance, showed the same tube degradation. Neither reactor has been online since.

PG&E Approved To Buy Power from SolarReserve CSP Project with Molten Salt Storage

[RenewableEnergyWorld.com, Jan. 29] San Francisco, CA – PG E Corp., the owner of California's largest utility, received approval from regulators to buy power from a 150-megawatt solar-thermal project in the state's Sonoran Desert, the first commercial-scale system in the state to include energy-storage capabilities. Closely held developer SolarReserve LLC will sell the output from its Rice project in Riverside County to PG&E's Pacific Gas & Electric utility for 25 years beginning June 1, 2016, according to a filing with the California Public Utilities Commission, which approved the contract at a meeting today in San Francisco. Terms weren't disclosed. The project will use thousands of mirrors to focus sunlight onto a central tower containing molten

salt, which is funneled through a steam generator to produce electricity. The salt retains heat and can produce power at night, an advantage over photovoltaic panels that cost less and only work when the sun is shining, according to Commissioner Mike Florio.

SDG&E Installing New Smart Grid Technologies To Create "Self-Healing" Electric Grid For San Diego
Benefits for Customers Include Faster Outage Detection, More Renewable Energy and Enhanced Safety
[ElectricEnergyOnline.com, Jan. 31] San Diego, CA - San Diego Gas & Electric (SDG&E) is installing several smart grid technologies on the electric grid in the San Diego region that are creating a more resilient and responsive energy network for local residents. These technologies include wireless sensors that automatically detect outages and other problems on the electric grid, and devices that smoothly integrate environmentally beneficial renewable energy. With the installation of these technologies, SDG&E is creating a more automated electric grid that promotes greater awareness of system conditions and can quickly respond to changes and events. In many cases, this grid will even be able to use this information to "heal" itself remotely or sense problems before they occur. "San Diego's electric grid is becoming one of the most advanced and reliable energy systems in the nation," said David Geier, vice president of electric operations for SDG&E. "The grid can respond immediately to outages and is increasingly resilient to events, while being more sustainable overall through the integration of clean energy. We are proud to be implementing these innovative smart grid technologies for the benefit of San Diego residents." By using an efficient broad-based wireless network provided by a local San Diego company called On-Ramp Wireless, the fault detectors described above immediately send alarms to grid operators if a problem occurs anywhere along the power lines. Instead of the time-consuming process of dispatching crews in the field to look for faults on electric wires during an outage, SDG&E will know where the outage occurred on the electric line and can quickly send crews to that location based on the automatic wireless signals sent by these devices. SDG&E has installed 2,000 of these devices throughout the region and intends to install 10,000 by 2017.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here.

  Income Tax Credit Provisions
  An investor seeking an income tax credit must document to the ACA the investment was made in either a qualified rural or bioscience company or any other qualified small business. For a qualified bioscience or rural company, the tax credit may total up to 35% of the investment amount over three years; for any other qualified business, the tax credit may total up to 30% over three years. If the tax credits exceed the investor's income tax liability, any unused tax credit amount may be carried forward for up to three taxable years as long as the investor timely claims the credits with Revenue.

  The ACA may authorize up to $20 million in tax credits to qualified investors beginning July 1, 2006 through June 30, 2016. The tax credits will be authorized on a first come, first served basis, which is established by the date and time the investor files an application with the ACA. Download the Angel Tax Credit Allocation Table Angel Tax Credit Allocation Table to view the remaining amount of tax credits available. For more detailed information please see below or direct questions to the Program Manager.

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona.

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).

- AZ Fast Grant - Technology Commercialization Assistance - Next round of grants opening in mid

November. This competitive grant enables Arizona-based technology companies to initiate the commercialization process. The grant will pay up to $7,500 to provide one or more of the following professional consulting services:

- An expert review of the technology under development to determine if it already exists, is a good candidate for intellectual property protection and is likely to find an attractive market.
- A commercialization feasibility study to identify showstoppers to commercialization before resources are spent commercializing a technology that is unlikely to succeed.
- Other commercialization assistance such as training or preparation for the submission of a federal SBIR/STTR grant application or another acceptable means of technology commercialization.

AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets.

Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. For more detailed information please see below or direct questions to the Program Manager.

Healthy Forest - Harvesters, initial processors and transporters of small diameter timber, may receive: Transaction Privilege Tax Exemptions, Use Tax Exemption and New Job Income Tax Credits.

Job Training Program offers job specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round

Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round

Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue.

Quality Jobs Tax Credit Program - Beginning July 1, 2011, this new program provides Arizona income tax credits for companies creating new jobs and investing in Arizona. The credit is valued at up to $9,000 over a 3-year period per each new employee and offers a 5-year carry forward provision for any unused tax credits. Eligibility qualifications are different for rural and metro areas.

Bonds Administered by the Arizona Commerce Authority.

Federal Programs

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Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Sales Tax Exemption for Machinery and Equipment - Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B)(14).

Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:

Support of Advanced Coal Research at U.S. Colleges - Through its annual Funding Opportunity Announcement (FOA) DE-FOA-0000584, entitled ¿Support of Advanced Coal Research at U.S. Colleges and Universities¿, the University Coal Research (UCR) Program supports the Department of Energy¿s (DOE) Office of Fossil Energy and the National Energy Technology Laboratory (NETL) mission by supporting long-term, high-risk meritorious fundamental research that advances the science of coal technologies at U.S. colleges and universities. Since its inception in FY1979, the UCR Program has maintained three objectives, to be achieved simultaneously, which are: (1) sustain a national university program of research in energy and environmental science and engineering related to coal through innovative and fundamental investigations pertinent to coal conversion and utilization; (2) to maintain and upgrade the coal research capabilities and facilities of U.S. colleges and universities; and (3) to support the education & training of our next generation of scientists and engineers. Reference number: DE-FOA-0000774. Issue date: 12/19/2012. Response due: 02/06/2013 08:00 PM ES. To access application materials, go to http://grants.gov/, select "Apply for Grants," and then select "Download Application Package."

National Science Foundation, Energy for Sustainability. This program supports fundamental research and education that will enable innovative processes for the sustainable production of electricity and transportation fuels. Processes for sustainable energy production must be environmentally benign, reduce greenhouse gas production, and utilize renewable resources. Current interest areas in sustainable energy technologies are biomass conversion, biofuels & bioenergy, photovoltaic solar energy, wind energy and advanced batteries for transportation. Expected Number of Awards, 42. Estimated total program funding, $9,200,000. Due dates, full proposal window: January 15, 2013 - February 19, 2013. For more information, visit http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026\

Solid-State Lighting Manufacturing Research & Development - Round 4 - The objective of this Funding Opportunity Announcement (FOA) is to achieve cost reduction of solid-state lighting (SSL) for general illumination through improvements in manufacturing equipment, processes, or techniques. It is anticipated that success will lead to a more rapid adoption/installation of high-quality SSL products resulting in a significant reduction of energy use and a corresponding reduction of environmental pollutants. A secondary objective is to maintain, in the case of light emitting diodes (LEDs), or establish, in the case of organic light emitting diodes (OLEDs), the manufacturing and technology base within the US. The Program Areas of Interest for this Announcement include topics for LED and OLED technologies. Improvements to cost-influencing metrics through the proposed approach shall not come at the expense of product performance metrics such as efficacy or color quality. Program Area of Interest 1: LED Luminaire/Module Manufacturing. Program Area of Interest 2: LED Test and Inspection Equipment. Program Area of Interest 3: OLED Deposition Equipment. Program Area of Interest 4: OLED Materials Manufacturing. For additional information regarding Solid-State Lighting Research and Development, please see the 2012 Manufacturing Roadmap. Reference number: DE-FOA-0000792. Close Date: 02/21/2013. For more information, see the full solicitation.

Plant Feedstock Genomics for Bioenergy
Reference Number: DE-FOA-0000770 Response Due Date: 2/25/2013 11:59:00 PM ES. To download this opportunity amendment, please log into FedConnect at https://www.fedconnect.net/fedconnect, click on the Opportunities page and click on the Title above.

Rooftop Solar Challenge II - The Rooftop Solar Challenge II (RSC II) is a program intended to deploy, at the regional and national scale, innovative, local government-level solutions towards eliminating market barriers and lowering the non-hardware balance of system costs ("soft costs") of grid-tied solar photovoltaics (PV). Applicants will be expected to have already demonstrated exceptional progress towards achieving soft cost reductions in specific geographic areas, and must present a credible plan to build on these successes by rapidly deploying techniques and tools to achieve larger-scale impact on solar PV markets. In addition to receiving a rigorous qualitative evaluation, applicants will be quantitatively assessed and scored during and at the end of the project period according to the DOE Solar Market Maturity Model (SM3). Applicants are expected to propose a means for achieving the widespread process standardization that is critical to achieving rapid scale-up of PV markets. Applicants may apply for one of two Topic Areas of awards:

1. Topic Area A: Wide-Impact Awards: These awards are intended to fund unique and innovative approaches to local solar PV market transformation, with particular focus on approaches with wide geographic and large population impacts.

2. Topic Area B: State and Regional-Impact Awards: These awards are intended to fund efforts to streamline and standardize processes at the state and regional level.

In accordance with 10 CFR 600.6(b), eligibility for award is restricted to Applicants:

- Located in the United States; and State or territorial governments; or
- Local governments; or
- Consortia, made up of regional or statewide teams of local, governments, large single jurisdictions, or Tribal governments; or
- Non-profit or for-profit entities authorized to act on behalf of a consortia of state and/or local governments.

The total population represented or impacted by an Applicant for this FOA must be 1,000,000 or greater as defined by the 2010 report of the U.S. Census Bureau. Reference number: DE-FOA-0000788. Close Date:

03/08/2013. For more information, see the full solicitation.

CSP Heat Integration for Baseload Renewable Energy - The goal of this Funding Opportunity Announcement (FOA) is to expand the market potential for CSP in the United States beyond stand-alone utility-scale power generating systems. The projects in this funding opportunity are expected to validate a 10 cents-per-kilowatt-hour (¢/kWh; in real 2013$) or lower Levelized Cost of Electricity (LCOE) from solar energy, without any subsidy, demonstrating market competitiveness with current intermediate power generation. Additionally, these projects are expected to validate and provide data on CSP hybrid system performance and power generation profile, which is necessary to convince grid operators, regulators and utilities to incorporate CSP systems into existing or future fossil plants. Reference number: DE-FOA-0000772. Issue date: 12/17/2012. Letter of intent must be received by 01/14/2013, no later than 5:00 PM Eastern Time. Response due: 03/10/2013 05:00 PM ES. For more information or applications, visit https://eere-exchange.energy.gov/

Regional Test Centers: Validation of Photovoltaic (PV) Modules and Systems
Under this Notice of Opportunity for Technical Assistance (NOTA), the U.S. Department of Energy (DOE) will provide technical assistance to the photovoltaic (PV) industry and other stakeholders in the form of validation testing and systems monitoring through DOE Regional Test Centers (RTCs). While the primary mission of the RTCs is to develop standards and establish the technical basis for bankability, the RTCs will also function as test beds for large-scale systems and provide independent validation of PV performance and reliability. Recipients of technical assistance will install PV modules and/or systems at all three RTC sites, if appropriate. Technologies may include photovoltaic (PV) and concentrating photovoltaic (CPV) applications. The DOE/RTCs would provide the land, the grid tie, and the testing / data monitoring required to support an assessment of product/system performance, consistency of PV module quality, degradation rates, and/ or PV system reliability issues. Through this effort, the RTCs will develop standards and guidelines for validating the performance and operation of PV modules and systems. Recipients will benefit by acquiring third-party validation of the module or system performance which they may then compare with their prediction of performance. Recipients may also

propose to ask the RTCs to develop models for predicting module or system performance instead of asking for verification of their own predictions. Technical assistance will not be provided for research, development, or early-stage testing and evaluation. The focus of the RTCs is to accelerate adoption of renewable energy generation sources by helping U.S. PV manufacturers validate new commercially ready technologies. DOE will not purchase hardware or otherwise provide direct funding to organizations selected from this Notice. Agreements are comprised of Technical Assistance only. Reference number: DE-FOA-0000661.Close Date: 03/29/2013. For more information, see the full solicitation.

SunShot Incubator Program
The DOE SunShot Initiative aims to reduce the installed costs of solar energy systems by 75% by the end of the decade, achieving grid parity for subsidy-free solar energy. SunShot drives American innovation through advanced research and development, strengthening domestic manufacturing and cutting-edge technology. If successful, the SunShot Initiative will ensure solar energy is a viable and economic source for the nation?s power needs and will significantly contribute to U.S. prosperity in the 21st century. The SunShot Incubator Program facilitates American small business? transitions from a proof of concept or business plan to domestic commercialization or deployment. The emphasis on proposed activities should be focused on addressing barriers to scale-up, commercialization, and deployment by 2015. This funding opportunity seeks to create independent businesses which can fully support themselves and continue to grow after the end of the award period. This opportunity is not for creating a product, organization, service, or other entity or item which requires continued government support. Areas of programmatic interest include but are not limited to (1) photovoltaics, (2) balance of systems, (3) power electronics, (4) concentrating solar power, (5) tools to address non-hardware costs of solar energy, (6) plug-and-play wiring and installation techniques, (7) energy storage, and (8) other proposals that bring novel, non-incremental technologies that facilitate SunShot goals in any area of solar energy deployment to market. Funding Opportunity Number: DE-FOA-0000838. Date: Apr 30, 2013. For more information, visit http://www.grants.gov/search/search.do?mode=VIEW&oppId=216193.

U.S. Dept. of Agriculture Rural Energy for America Program - Renewable Energy System and Energy Efficiency Improvement Guaranteed Loan and Grant Program

ENERGY-RELATED EVENTS

2013

- Money and More: Tribal Resources Forum
  February 6 Phoenix, AZ

- Arizona SciTech Festival
  February 9 – March 13

- HUD/ONAP Greener Homes Regional Training
  February 12-13 Albuquerque, NM

- As the World Trades: Arizona's Place in the Global Economy
  February 19 Phoenix, AZ

- SRP Residential Solar Basics Workshop
  February 27 6:30pm-8:00pm Tempe, AZ

- Water Security from the Ground Up
  March 5 Tucson, AZ

- Geothermal Energy & Waste Heat to Power: Utilizing Oil and Gas Plays
  March 12-14 Dallas, TX

- IEEE Green Technologies Conference
  April 4-5 Denver, CO

- 2013 ACI National Home Performance Conference & Home Energy Leadership Summit
  April 29 – May 3 Denver, CO

- PV America West 2013
  May 14-16 San Diego, CA
- XXII La Jolla Energy Conference
  May 20-22 La Jolla, CA
- Energy Management Congress West, 31st
  June 19-20 Las Vegas, NV
- 2013 ASHRAE Annual Conference
  June 22-26 Denver, CO
- 7th Concentrated Solar Thermal Power Conference & Expo
  June 26 – 27 Las Vegas, NV
- NASEO 2013 Annual Meeting
  September 15-18 Denver, CO
- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO
- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA
- Ecobuild America 2013
  December 9-13 Washington, D.C.
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ